



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

**D3065-1**  
**Job Sheet 173416**



**Part No:** D3065-1

**Job Qty:** 60 ea

**Part Name:** Step Spacer



**Part Weight:** 0 lbs

**Status:** Scheduled

**Priority:** Medium

**Job Created:** 3/1/18

**Job Tracking No:**

**Due Date:** 3/9/18

**Created By:** Linda Lacelle

**Type:** Stock

**Description:**

**Note:** DWG REV B IPP: C 02.11.01 Incorporated D3066-1 IPP KJ/RF IPP:

**Ship Via:**

### Bill of Materials

### Job Routing

| Op No | Operation          | Qty    | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off                |
|-------|--------------------|--------|------------|----------|-----------|---------|-----------------------|-----------|-------------------------|
|       |                    |        |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |                         |
| 90    | Start up Operation | 60 Ea  |            | 3/8/18   | 0.00      | 0.00    | Start Up Waterjet     |           | SA 180305               |
| 100   | Waterjet           | 60 pcs |            | 3/8/18   | 0.00      | 2.12    | Waterjet1             |           | SA 180305               |
| 120   | QC                 | 60 pcs |            | 3/8/18   | 0.00      | 0.00    | QC8                   |           | 38                      |
| 132   | Brake NC           | 60 pcs |            | 3/8/18   | 0.02      | 1.60    | Brake NC 2            |           | DAS 38                  |
| 150   | QC                 | 60 pcs |            | 3/8/18   | 0.00      | 0.00    | QC5                   |           | 38                      |
| 160   | HandFinish         | 60 pcs |            | 3/9/18   | 0.00      | 0.87    | HandFinish1           |           | SA 18-03-09             |
| 161   | QC                 | 60 pcs |            | 3/9/18   | 0.00      | 0.00    | QC7-1                 |           | 38                      |
| 180   | Packaging          | 60 pcs |            | 3/9/18   | 0.00      | 0.00    | Packaging3-1          |           | 6A124 MAR 13 2018       |
| 190   | QC21-SA            | 60 Ea  |            | 3/9/18   | 0.00      | 0.00    | QC21                  |           | DAS 21 9-80 MAR 13 2018 |

Part Op 100 - 1-Cut as per Dwg D3065

Descriptions: 180 - LOCATION : GA

### Job BOM

| Part / Item  | Component Name     | Quantity             | Operation             | Container |
|--------------|--------------------|----------------------|-----------------------|-----------|
| M2024T3S.040 | 2024-T3 .040 Sheet | 7.4280 sf (.1238 ea) | 90-Start up Operation |           |

### Job Allocations

| Operation             | Component Part | Required | Inventory | Allocated |
|-----------------------|----------------|----------|-----------|-----------|
| 90-Start up Operation | M2024T3S.040   | 7        | 88        | 0         |

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                      |                          |                                   |                          |            |                          |                     |                          |             |                          |
|--------------------------------------------------------------|----------------------|--------------------------|-----------------------------------|--------------------------|------------|--------------------------|---------------------|--------------------------|-------------|--------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ | <b>DISPOSITION</b>   |                          | <b>AGAINST DEPARTMENT/PROCESS</b> |                          |            |                          |                     |                          |             |                          |
|                                                              | Rework               | <input type="checkbox"/> | Skid-tube                         | <input type="checkbox"/> | Cross tube | <input type="checkbox"/> | Water Jet           | <input type="checkbox"/> | Engineering | <input type="checkbox"/> |
|                                                              | Scrap                | <input type="checkbox"/> | Machining                         | <input type="checkbox"/> | Small Fab  | <input type="checkbox"/> | Prod. Eng. Coord.   | <input type="checkbox"/> | Quality     | <input type="checkbox"/> |
|                                                              | Use-as-is            | <input type="checkbox"/> | Thermoforming                     | <input type="checkbox"/> | Finishing  | <input type="checkbox"/> | Rec/Store/Packaging | <input type="checkbox"/> | Other       | <input type="checkbox"/> |
|                                                              | Suspected Unapproved | <input type="checkbox"/> | Large Fab                         | <input type="checkbox"/> | Composite  | <input type="checkbox"/> | Supplier            | <input type="checkbox"/> |             |                          |

Date : \_\_\_\_\_ Step #: \_\_\_\_\_ QTY Effective : \_\_\_\_\_ MRB (QS1042) Approval \_\_\_\_\_

|                                                                                         |                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description Work Order Deviation</b><br><br><br><br><br><br><br><br><br><br><br><br> | Completed By _____                                                                                                                                                                                                                   |
|                                                                                         | Hand / Supervisor Approval Verification _____                                                                                                                                                                                        |
|                                                                                         | QA Coordinator Approval _____                                                                                                                                                                                                        |
|                                                                                         | <br>Container No: S047839<br>Part: D3065-1<br>Job No: 173416<br>Serial No/Batch: S047839<br>Revision: _____<br>Inspector: _____<br>Date: 03/05/18 |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Root Cause</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Fr <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/I <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/><br>OTHER : _____ |
| ned Wrong _____<br>e Dimensions _____<br>nder tolerance _____<br>orrect _____<br>. or Lost/Missing _____<br>Part Moved _____<br>Drawing _____<br>Finish _____<br>Misread _____<br>Turning Sequence _____                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Part Specifications |             |                                |                |       |                  |
|---------------------|-------------|--------------------------------|----------------|-------|------------------|
| Spec No             | Description | Target/Tolerance               | Limits         | Type  | Special Comments |
| 1                   | Step Spacer | 0.250inches $\pm$ 0.010        | 0.260<br>0.240 | 0,250 |                  |
| 2                   | Step Spacer | 2.093inches $\pm$ 0.010        | 2.103<br>2.083 | 2,095 |                  |
| 3                   | Step Spacer | 3.936inches $\pm$ 0.010        | 3.946<br>3.926 | 3,937 |                  |
| 4                   | Step Spacer | 4.186inches $\pm$ 0.010        | 4.196<br>4.176 | 4,192 |                  |
| 5                   | Step Spacer | 0.587inches $\pm$ 0.010        | 0.597<br>0.577 | 0,588 |                  |
| 6                   | Step Spacer | 0.128inches + 0.005<br>- 0.001 | 0.133<br>0.127 | 0,129 |                  |
| 7                   | Step Spacer | 0.125inches $\pm$ 0.010        | 0.135<br>0.115 | 0,125 |                  |
| 8                   | Step Spacer | 3.465inches $\pm$ 0.010        | 3.475<br>3.455 | 3,467 |                  |
| 9                   | Step Spacer | 1.250inches + 0.012<br>- 0.001 | 1.262<br>1.249 | 1,250 |                  |
| 10                  | Step Spacer | 0.368inches $\pm$ 0.010        | 0.378<br>0.358 | 0,369 |                  |
| 11                  | Step Spacer | 0.871inches $\pm$ 0.005        | 0.876<br>0.866 | 0,872 |                  |
| 12                  | Step Spacer | 0.040inches $\pm$ 0.010        | 0.050<br>0.030 | 0,040 |                  |

Plex 3/1/18 1:53 PM dart.lacelle.linda



DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Step #: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QSI042) Approval                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Completed By                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lead hand / Supervisor Approval Verification                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | QC / QA Coordinator Approval                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Misabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| <input type="checkbox"/> OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                   |